
The Effect Of Discovery Learning Model On Critical Thinking Ability In Thematic Learning

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Abstract. The purpose of the study is to explain the effect of discovery learning models on the critical thinking skills of fourth grade students of elementary school. The type of research used was an experiment with the Pretest Posettest Only Group Design design. The sample used in this study were fourth grade students in Undaan Kudus sub-district with a total of 85 students. All data is collected using tests, observation and documentation. Furthermore, the data were analyzed using t test. The results of this study indicate that: (1) there is a significant effect of the use of discovery learning models on the critical thinking skills of fourth grade students of elementary school. This is evidenced by the results of $t_{count} > t_{table}$ ($2.087 > 1.993$), (2) the discovery learning model is effective for improving critical thinking skills.

INTRODUCTION

Indonesia is one of the developing countries in the world. Currently Indonesia is improving all fields in order to follow globalization. One area that continues to be improved today is the field of education. One of the efforts being carried out by the government is innovation in learning. Learning innovation is a planned effort that leads to the realization of a better learning process. Teachers who always innovate in learning both seen from the approaches, strategies, models, media and learning resources that are always changing makes students not easily bored in learning. In addition, students want to know about a material taught by the teacher must increase because students feel interested in learning so that critical thinking skills begin to grow. Susanto (2013: 17) states that the success of students in learning depends also on the model of material presentation. A fun, non-boring, interesting, and easy-to-understand presentation model has a positive effect on student success.

Usually the problem of students in critical thinking is related to how the teacher in giving learning. Modern and interactive. teacher learning is very effective in improving students' critical thinking skills compared to

conventional learning. Asmani (2011: 5) that learning is the center of teaching and learning activities, consisting of teachers and students, which leads to intellectual maturation, emotional maturity, spiritual height, life skills and moral majesty. Students must be involved continuously in the learning process so that they gain experience and knowledge directly. In the modern learning process, learning can be presented by teachers through innovative learning models including discovery learning models. Discovery learning is a learning that focuses on the problem solving process, so students must explore various information in order to determine their own mental concepts by following the teacher's instructions in the form of questions that lead to the achievement of learning objectives. Discovery learning model is a component of educational practice that includes teaching methods that promote active learning, process-oriented, self-directed and reflective (Suryosubroto, 2009: 192). Many findings in the field show that students' critical thinking skills are very weak. This is indicated by the low ability of students in analyzing a problem, the students' curiosity is low because they are still dependent on the teacher as in the KTSP curriculum, they are not yet independent in conducting experiments

and are still guided in making conclusions / generalizations. The decline in critical thinking is caused by many things including media and learning resources that have not been optimally proven by the implementation of learning that is always in the classroom, the use of lecture models without being accompanied by other models that vary, lack of teachers in preparing learning materials that have not adjusted the education calendar, learning activities still teacher-centered so that it does not increase students' curiosity which is the key to learning.

Based on the above findings, problems can be formulated including 1) how is the application of discovery learning models to the ability to think critically in thematic learning ?; 2) how is the effectiveness of the learning model in the ability to think critically in thematic learning ?; 3) how is the effect of discovery learning models on the ability to think critically in thematic learning? The purpose of this study is to find out: (1) Describe the ability to think critically in thematic learning before and after the discovery learning model is applied to the theme of my dreams in grade IV in elementary school, (2) Analyze the effectiveness of discovery learning models in the ability to think critically in thematic learning in my theme of class IV in elementary school. (3) Analyzing the effect of discovery learning models on the ability to think critically in thematic learning on my dream theme in grade IV in elementary school.

METHOD

The research design used in this study was Pretest Posettest Only Group Design. This research was carried out in the odd semester of the 2017/2018 school year. The sample in this study were fourth grade elementary school students in Undaan Subdistrict consisting of 2 Sambung Elementary Schools, 1Undaan Kidul elementary school, 4 Karangrowo elementary school , 1 Undaan Tengah elementary school and a total of 85 students. In selecting the sample class the researcher used purposive sampling technique.

The variables in this study are models as independent variables and critical thinking abilities as dependent variables. The method used in collecting data is non-test method and test method. The non-test method used is observation to collect data about students' critical thinking skills during the learning process while the test method uses tests in the form of a description of 10 questions.

The hypothesis proposed in this study are (1) the use of discovery learning models influences the ability to think critically on the theme of my dreams, (2) the use of effective discovery learning models on students' critical thinking skills on the theme of my dreams. Based on the formulation of the problem and the proposed hypothesis, hypothesis testing is analyzed using the t test. Before testing the data analysis, the data is first tested for normality and homogeneity between the variances in the sample. Data normality test is done by shapiro wilk test using SPSS 23.00 for windows. The variance homogeneity test was carried out using the statistical test using SPSS 23.00 for windows. Hypothesis testing uses independent t test variance analysis.

RESULT AND DISSCUSSION

The table 1 is a recapitulation of the results of the calculation of the independent t test.

Table 1

Group Statistics					
group		N	Mean	Std. Deviation	Std. Error Mean
post test critical thinking ability	experiment	40	76.5500	9.35332	1.47889
	control	34	72.1176	8.90272	1.52680

Based on the table 1 above, the control group mean value is 71.11 and the experimental group is 77.55. Because the experimental group's mean value is greater than the control group mean value, it can be stated that the discoveri learning model is effective for improving students' critical thinking skills.

The influence or not of the discovery learning model on critical thinking skills can be seen in the table 2 below

1. Aspects analyze arguments
The low students in analyzing arguments caused by several things such as new students

Table 2

Independent Samples Test										
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
post test critical thinking ability	Equal variances assumed	.101	.752	2.077	72	.041	4.43235	2.13425	.17779	8.68691
	Equal variances assumed			2.085	71.050	.041	4.43235	2.12562	.19405	8.67066

Based on the table above, t count coefficient is 2.087 while t table with 72 df is 1.993 and the significance value is 0.041. Therefore, t count > t table (2.087 > 1.993) and the significance value is less than 5% (p = 0.041 < 0.05). This shows that there are significant differences between the experimental class and the control class. It can be concluded that there is a significant effect of the use of discovery learning inquiry models on the critical thinking skills of fourth grade elementary students.

The pretest results of observation in critical thinking skills in the experimental class students obtained an average score of 49.05 while the control class scored 46.32 while the post test in the experimental class obtained an average score of 72.25 while the control class obtained an average score of 72, 11. There was a difference in pretest of 2.73 and post test of 0.14. Students' critical thinking skills in each aspect with 3 meetings can be recapitulated at figure 1 as follows.

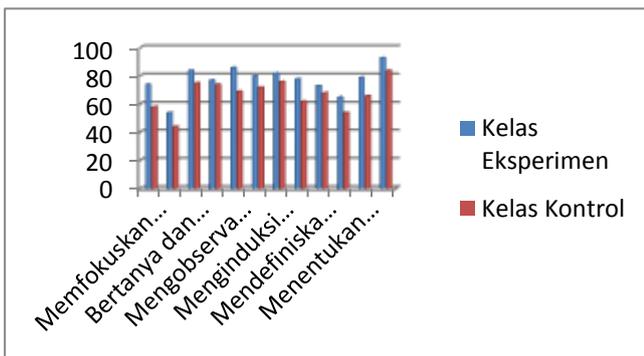


Figure 1. Students critical thinking skills

Based on observations and tests, among the 12 aspects of critical thinking skills that require further handling or guidance include 3 aspects including:

adapting to the taught model, students rarely in analyzing an argument in both learning and everyday life, students are rarely invited by teachers to think or analyze a problem, the habits of students who depend on teachers and the difficulty of students in expressing a thought. In addition to the results of these observations, the ability to analyze the questions during the test is also fairly low. Based on the results of the study, in the experimental class many students can analyze story and statement questions compared to the control class. Students in the control class who use conventional models only answer the statements presented without providing supporting arguments. In addition, few students rarely give arguments on the problems presented in the problem. This is in line with research conducted by Fatmawati, et al (2013) that the low ability of critical thinking of students is caused by a lack of students in analyzing a problem or problem.

2. Aspects identify assumptions

In identifying an assumption or statement, one or two students experience difficulties. Especially in the control class, they mostly misperceived their understanding of the problem. this is not the case with the experimental class most students are able to understand the problem and are able to identify the problem by being strengthened by the reasons obtained from the supporting statement. This is reinforced by previous research conducted by Rahmawati, et al (2016) stating that the achievement of students' critical thinking skills includes providing simple explanations, building basic skills, providing conclusions, making further explanations and making estimates and integrating into very low categories.

3. Aspects focus questions

In the aspect of focusing the question into a difficult part for students due to several things including students rarely asking questions in learning, students are not accustomed to making correct and good questions based on 5W + 1H demands so that the person they are talking to understands and sometimes students are confused about the question so that it is not coherent. In addition the teacher also influences in asking questions. If the teacher asks indirectly, students will receive information and make a question different. This is in line with research conducted by Ermasari, et al. (2012), namely the obstacles experienced by teachers in asking questions is understanding of the types of questions that are still lacking, lack of planning questions to be asked, lack of training on questioning skills and lack of awareness of teachers. the obstacles he experienced.

CONCLUSION

Based on the results of the study indicated that: (1) The use of discovery learning models have a major influence on the ability to think critically on the theme of my dreams, (2) Use of discovery learning models effectively to students' critical thinking skills on my dream theme.

Based on the description or findings above it can be concluded that there is an influence of discovery learning model on the critical thinking skills of fourth grade students of elementary school. Some suggestions raised in connection with this research include: (1) it is expected that teachers use discovery learning models in learning to improve students' critical thinking skills, (2) teachers must often use creative and innovative models that help students to hone their critical thinking skills, (3) in providing teacher questions it is expected to provide examples of real problems that inspire students' critical thinking skills,

(4) students are expected to always be active, creative and critical in learning so that their critical thinking skills are always honed.

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